

ABSTRACT

SUPERCHARGED OPEN CYCLE GAS TURBINE ENGINE

The present invention provides a supercharged open cycle gas turbine engine
5 comprising a core engine for generating shaft power output, said core engine includes a
multi-stage compressor, the first stage of which being a rotary ram compressor or a rotary
ram-in compressor; a supercharger for increasing the pressure of intake air of the core
engine, said supercharger includes a rotary ram-in compressor and a turbine driven by
gases discharged from the core engine and having variable-area nozzle assembly;
10 operator controlled means for elective bleeding of variable part of the exhaust gases
discharged from the core engine and supplied to the supercharger turbine; at least one
pressure sensor for detecting the degree of rise in the pressure of air supplied by the
supercharger's compressor; means for adjusting the area of the nozzles of the
supercharger's turbine according to the detected degree of rise in the air pressure; and
15 means for adjusting the rate of fuel supply to the core engine according to the pressure
level of air supplied by the supercharger's compressor.